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STERILITY

BY

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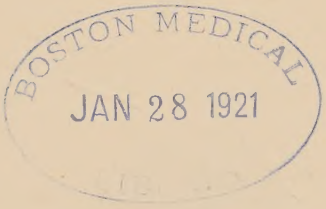

PREFACE.

So much has been written on the causes and treatment of sterility in women that it may at first sight appear superfluous on my part to add still further to the plethora of books on the subject. My apology must consist in the fact that I am convinced a great amount of error in doctrine relative to this is in print, and thus it behoves me to endeavour to rectify, as far as I am able, the false, or, at least, mistaken, pathology that has in many instances been taught on a topic of such importance. I on one occasion heard a paper read on the treatment of sterility which a certain gentleman advocated, and which he averred had been almost invariably successful in his hands, and I have no possible reason to doubt that whenever, if ever, he had been permitted to experiment, the result may have been as he stated. If so, then the particular condition of the uterus which I hold is the most universal cause of sterility, did not exist. His method consisted in making arrangements to attend upon the woman immediately after coitus had taken place. He, then, armed with a syringe, picked up the seminal fluid from the vagina and

squirted it into the uterus, and thus brought about impregnation. It would be presumptuous in me to doubt the word of a man who made such a statement, but I hardly can conceive that any lady or gentleman would submit to such a method of treatment. At least I may be permitted to say that I have never met with one to whom I would even have dared to suggest such measures.

It is a well-known fact that impregnation has frequently resulted when the vagina has never been entered, which is not a matter of surprise when we are cognisant of the locomotor power of the spermatozoa. Such faculty of motion, then, being an endowment of these minute bodies, it is not a matter of surprise that they are able to find ingress to the uterus if circumstances are even very unfavourable to their doing so; how much more then if favourable conditions obtain?

Their failure does not depend upon any inherent vitality or energy they may possess (for these are, as a rule, all that is essential to their future well-being), but upon the succeeding vicissitudes they are subjected to and the condition of the nidus that is provided for them.

It is generally accepted that it is the ovum which is acted upon by the spermatozoon, and is thereupon endowed with capabilities it hitherto did not possess; in short, that it is elevated, in consequence, from a passive to an active state of existence, and is thus translated into an embryonic human being. If we accept this theory, we must of necessity profess the belief that the male plays only a secondary part in procreation. Now I hold quite

the opposite opinion. My view is that the functions of the ovum consist solely in providing the only pabulum which the spermatozoa can possibly subsist upon in their initial stage of existence. It is the instinctive craving for this sustenance, I believe, that impels the spermatozoa to crowd round the ovum, the strongest of which, it would appear, however, in the majority of instances, is alone successful in gaining an entrance thereto. When this has been accomplished, the spermatozoon immediately commences to absorb the nutriment provided for and adapted to it, and, consequently, it becomes endowed with new energies and powers. On the other hand, the ovum is stimulated simultaneously to an amount of vitality which confers upon it the power of acting the part of a mother to the spermatozoon, as is demonstrated in the rapid development of the embryo. If, however, the health of the endometrium is imperfect, the ovum must necessarily fail in its efforts to assist in the process beyond a certain point, hence the embryonic entity dies and sterility is the result, even if the vitality of the spermatozoon has not previously been destroyed by contact with those acrid discharges which so frequently co-exist.

It has frequently been assumed that the right ovary gives origin to ova which produce males, while the left is the source of female children. This theory is quite erroneous, as I have met with numerous instances where its fallacy has been demonstrated beyond doubt. One was in a woman from whom I removed the left ovary, and she afterwards became the mother of two boys and two

girls. Another was that of a woman from whom I removed an ovarian tumour of the right side when she was four and a half months pregnant, and she was delivered at full term of a boy.

My conviction then is, that the sex of the child is determined in the spermatozoon, also that this body is the primordial and necessary element which is the essential source of the future being, and that the ovum is simply the nurse and cradle until a connection is established with the uterus, and, through it, with the vascular system of the mother.

ROBERT BELL.

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STERILITY.

In considering the important subject of sterility in the female, we must not forget the fact that occasionally impotency may exist in the male. This is of such rare occurrence, however, that it may be looked upon almost as phenomenal; moreover, when it does occur, it can generally be traced to the effects of some previous gonorrhœal or syphilitic attack. That it may, however, occur idiopathically is also to be admitted, but the percentage of such cases is so infinitesimal that for all practical purposes they scarcely deserve consideration. In the female, also, it must be conceded that sterility of an idiopathic origin may exist, but this likewise may be viewed as a very rare defect. In short, it may be accepted as a principle that when sterility does exist in either sex, it is the sequelum of some disease as opposed to a defective condition of the sexual organs. It, however, being my object to confine my attention specially to the subject of sterility in the female, with whom, in the large

majority of cases, the fault usually lies, I may proceed to observe that I consider the one great factor in its production to be a diseased condition of the endometrium.

This may be due to various causes, such as stenosis, catarrh, hydrostatic congestion due to a defective heart action, or some vascular derangement produced by obstinate constipation. It may, on the other hand, be aggravated by flexions, versions, or prolapsus. Stenosis, as well as retro- and ante-flexion, are credited with many evil consequences, such as dysmenorrhœa, menorrhagia, &c., but these various pathological conditions would never co-exist were the endometrium healthy. To my mind, we are not sufficiently alive to the fact that endometritis proceeding to metritis is a pregnant cause not only of the various affections of the uterus, but those of the tubes and ovaries also. Take stenosis of the cervical canal for instance (as contra-distinct to stenosis of the external os, which, as we all know, is frequently associated with conical cervix), in the large majority of cases we shall find that it is due to a hypertrophied condition of the mucous membrane, this being consequent upon chronic hyperæmia. We shall ascertain, if we inquire into the history of the case, that, if the condition has existed for any length of time, the symptoms of distress have gradually increased in severity; and if we examine the uterine canal beyond the internal os, it will be found to be unduly dilated, producing a bagginess of the organ, frequently, but not invariably, accompanied by a hypersensitive condition of the fundus, while, from

the lining membrane of the canal, a muco-purulent secretion is constantly being discharged. Such being the case, it is needless for me to remark that forcible dilatation, without any other treatment, cannot prove other than injurious. If, however, stenosis is really the primary affection—that is to say, if the case is congenital—it does not necessarily imply that sterility, or even dysmenorrhœa, may obtain if the upper reaches of the endometrium are healthy, and for this reason, that the spermatozoa have no difficulty in finding a passage through as narrow a canal as any ordinary fluid can escape by. Blood, in its normal condition, can readily find its way through a channel of very minute calibre as rapidly as it exudes from the lining membrane of the uterus in the process of normal menstruation. This statement can readily be proved by noting instances where dysmenorrhœa has supervened upon years of freedom from pain at the menstrual epochs, and where it has been conclusively proved that the calibre of the os has not altered in the least degree. The cause of dysmenorrhœa in such circumstances is due to an unhealthy condition having become established in the uterine canal, and it is well known that when blood comes in contact with tissue which has departed in the slightest degree from the healthy standard, this acts upon it to a greater or lesser extent as a foreign body would do, and alters its character. Its fluidity is in consequence decreased, and hence the distress which so frequently accompanies stenosis, because coagulation has taken place, which necessitates uterine contractions to expel the

coagula, hence the pain of this form of dysmenorrhœa.

The uterine canal, being a *cul-de-sac*, is liable to retain its discharges for an undue length of time when the outlet is contracted, and, as it is not entirely shut off from the external atmosphere, decomposition is liable to occur within the cavity; hence the tendency for all uterine affections to become chronic, because at each period the irritation increases, till well-marked endometritis is the result. The effect upon the uterine wall is that it becomes hypertrophied and flaccid, which latter condition is liable to induce flexions, versions, and prolapsus. When this condition is brought into existence it does not often confine itself simply to the uterine canal, but spreads by continuity of tissue into the Fallopian tubes, so that salpingitis is liable to co-exist. Now, just as endometritis reduces the calibre of the cervical canal, so does that of the Fallopian tubes become lessened. Especially does this occur at their outlet into the uterus, where the lining membrane of that organ, in consequence of its hypertrophied condition, tends to occlude the orifice. In this way, hydro- and pyo-salpinx frequently originate.

It must be borne in mind, however, that stenosis may precede endometritis, and give rise to this affection by the process which I have just mentioned. This is especially the case after marriage, if pregnancy does not occur within a short period. In these circumstances it will invariably be ascertained that the bagginess above referred to is found to be present. Indeed, in unmarried women this

stenosis almost invariably is the factor in producing endometritis, as, in the event of the flow being considerable, the discharge does not escape at the same ratio at which it is thrown off by the endometrium, and uterine colic is the result. This recurring month after month tends to convert the physiological hyperæmia, which is the accompaniment of menstruation, into a pathological hyperæmia, which, in other words, is congestion, and this becomes chronic. At future periods the physiological hyperæmia aggravates the pathological, the latter tending to cause the discharge to coagulate, which necessitates further effort on the part of the uterus to expel its semi-solid contents, and as a further consequence the condition becomes more and more aggravated, until the health becomes seriously interfered with. Especially is this so with regard to the nervous apparatus.

Although these questions are perhaps not altogether within the scope of the subject under discussion, yet they have such an important bearing upon it that their importance in relation to sterility cannot be ignored.

I have frequently demonstrated that displacements of the uterus are invariably dependent upon a flaccid condition of its walls, and not so much, as is generally believed, upon a lack of support on the part of the uterine ligaments. It will therefore be unnecessary to notice them at this juncture in connection with the subject under discussion, although they are frequently referred to as *causes* of sterility, while in reality they are outcomes of some pathological condition of the endometrium. In conse-

quence of this they are frequently co-existent, but it will be fallacious to affirm that they are *causes*. This hypothesis, therefore, is one which I do not feel inclined to support. I repeat, therefore, that, to my mind, the one great factor of sterility is endometritis, and in this of course I include endocervicitis.

Not so very long ago it was accepted as an axiom that if a woman had ever been the subject of inflammation of the womb she would never become pregnant. Doubtless those who made such a statement were, from the light that at that time had been shed upon the subject, perfectly correct. The truth of the statement, however, only lay in the fact that no satisfactory treatment of endometritis was available at the time; indeed, the pathology of the disease was not understood, how, then, could they be expected to treat it successfully? Now, in consequence of the rapid strides the science of gynæcology has made, it is beyond question that the old doctrine has exploded; nay, more, I have met with frequent instances of women who have been the victims of even gonorrhœal endometritis bearing children after that had been removed; and with regard to simple endometritis I could detail numberless instances of pregnancy occurring after its removal, and this even after it had been the cause of sterility for as many as fourteen years. Endocervicitis may certainly *per se* be the cause of sterility, and doubtless occasionally is, but it is rarely dissociated from a similar condition of the endometrium, and endometritis is never present without endocervicitis being co-incident, so that it

is quite unnecessary for me to consider them individually in relation to this subject. How, then, it may be asked, does endometritis act as such an important factor in producing sterility? and why do physicians hold that the chances of a woman becoming a mother are lessened as years advance if pregnancy does not take place during the earlier period of married life? If we examine the discharge which is secreted so abundantly in endometritis, we shall find that it frequently consists of a muco-purulent fluid possessing an acrid character. It is to this feature of the nature of the discharge that I attribute so much importance, because of the effects which it produces not only upon the lining membrane of the uterus itself, but also upon the vaginal portion of the cervical mucous membrane, which it denudes of its epithelial covering, giving rise to erosion, papillary ulceration, and not infrequently to vaginitis itself. The effects of its acridity being so injurious to the mucous surfaces over which it passes cannot be doubted, therefore we feel compelled to assume that it will also have a destructive effect upon the spermatozoa when they come into contact with it. Though this were not actually the case, however, the unhealthy condition of the endometrium, of which it is the product, would certainly deprive that membrane of the power of constituting a proper nidus for the ovum, even if the latter by any possibility were to become impregnated.

If pregnancy does not follow marriage within a reasonable time, there must of necessity, in the majority of cases, be present some unhealthy con-

dition of the generative organs of the female. This, at all events, is the only deduction I can draw from the dictum which has been so often quoted, that the chances of a woman becoming a mother grow less as the years advance after marriage. Such an impression can only be explained by the fact that if there exists at the time of marriage dysmenorrhœa, even to a modified extent, and this is associated with stenosis, in consequence of the uterine excitement that naturally follows, the pathological condition will become accentuated, and give rise by degrees to such an aggravated form of the disease that pregnancy will become a physical impossibility.

From the above deductions we can reasonably conclude which is the probable potent factor in the causation of sterility in such a case. There certainly may possibly be stenosis, but that, as has been averred, would not prevent impregnation, for the cogent reason that it could not act as a barrier to the spermatozoa gaining entrance to the cavity of the uterus while the canal is sufficiently patent to permit the menses to escape. If, then, there is stenosis without pain at menstruation it can safely be inferred that no disease of the endometrium is present, and therefore no mechanical or pathological hindrance to conception exists.

Again, flexions are frequently credited with being factors of sterility. This, however, is only due to the fact that they indicate an unhealthy condition of the uterine lining membrane and walls; in short, they are only accessories of the condition and dependent upon the one prime factor

of sterility—namely, endometritis. Now we know that not infrequently unmarried women are the victims of this disease, and though in many instances it may not be sufficiently severe to interfere very much with the general health before marriage, the case becomes much altered after that event, and this for very cogent reasons. As time goes on the diseased condition does not tend to diminish but to increase, in consequence of the greater excitement the organ undergoes, the unhealthy condition, which at first was so trifling, becoming consequently more and more pronounced. It is little wonder, therefore, if sterility in these circumstances is persistent. The future of the patient, however, is not desperate if the endometrium, by judicious treatment, is restored to its normal condition, and I have no hesitation in affirming that when this is accomplished—no matter how long after marriage—the most powerful, as well as the most frequent, barrier to conception is removed.

In speaking thus, I am not hazarding statements which I cannot bring forward substantial and abundant evidence to verify, therefore I have no hesitation in placing them before the profession for criticism.

Many a miserable woman goes through life under the impression that she is incapable of becoming a mother, while in reality the fault lies in a curable affection of the uterus. Many women, on the other hand, have only one child, others two, and so on; they cannot surely be said to be sterile, yet they are *pro tem.* quite as unable to bear chil-

dren as the so-called barren woman. In both instances the cause is the same. One is frequently called upon by women who have not borne children for a variable number of years, and yet their ages do not preclude this; moreover, they will tell you that their health has never been so good as it was since their last pregnancy, and then you will elicit from them subjective symptoms which will force you to the conclusion that the uterus is in an unhealthy condition. It is obvious, then, that our duty is, by approved measures, to restore the integrity of the uterus, when, in all probability, another epoch of childbearing will be inaugurated. Such at least has been my experience, while, simultaneously, the great risk of more serious mischief supervening will be averted.

As I have before remarked, it will frequently be discovered that when stenosis of the cervical canal is present the cavity of the uterus is in an unhealthy condition, and gives the sensation of bagginess when the sound is introduced. In these circumstances the uterine walls have lost their normal tone, and are pliable and flabby instead of being rigid. In consequence of this a flexion, probably backwards, will inevitably ensue. If, in these circumstances, the tone of the organ be restored, it will speedily become apparent that the departure from functional activity and potency has not been due to the stenosis; in short, that this has not constituted the stumbling-block to impregnation, but, on the other hand, that the acrid secretion from the endometrium has not only been the cause of the stenosis being the predisposing agent

in rendering this a source of suffering, but also acting as the power which has destroyed the vital energies of the spermatozoa.

It must always be noted that endocervicitis may exist for a time without of necessity extending to the endometrium, but sooner or later, either by extension of the inflammation itself, or by the repeated monthly efforts of the uterine walls, which become more and more necessary as time progresses to propel the menses through the narrow channel, or by both combined, the endometrium must of necessity become involved.

The more extensive my experience the firmer becomes my conviction that endometritis is the one potent cause of sterility, and not only of sterility but of various other affections of the uterus, amongst which the most important are flexions, and, as I have endeavoured to show elsewhere, in the large majority of instances disease both of the tubes and ovaries is secondary to this also. This being the case it is not difficult to understand how essential the treatment of this affection is when we endeavour to restore health to these organs, and it must be admitted that possessing this knowledge a great source of difficulty is removed.

My next duty is to give my views as to the treatment of this important disorder. This I invariably commence by curetting the uterine canal, immediately after which I am in the habit of applying to the whole of the endometrium iodised phenol, which application is followed by the introduction of a tampon saturated with the glycerine of alum and boracic acid solution. The

patient is kept in bed for some days, and the tampon changed every forty-eight hours. Afterwards it is necessary that the patient should be under supervision for some weeks, and at least once a week the intra-uterine medication applied, while bi-weekly a tampon is introduced. By these measures we may safely look for a complete recovery in the course of two to four months.

DYSMENORRHŒA.

Few subjects have given rise to a greater amount of discussion, and have evolved a greater diversity of theories, than that of menstruation. When one attempts to wade through the plethora of literature which treats of its cause, its source, its effects on the individual, &c., he will speedily ascertain that he has set himself a task of no mean difficulty, and when his labour is completed he will find that he is probably more at sea than when he commenced his more extended investigations. I confess I hardly thought it possible such a variety of opinion could exist upon any subject, and I fear it is nothing short of presumption on my part to attempt to speak on a theme which has exercised the thought and ingenuity of so many able and eminent members of our profession, the result, however, to my mind, being that, as yet, no definite and generally accepted theory has been established. My object, then, is to offer for consideration, if not acceptance, views which have for years been becoming more and more established in my mind, and which have for long dictated the line of treatment adopted by me. As we cannot dissociate the catamenia from dysmenorrhœa, it will be desirable, at all events, to offer a few remarks upon the physiology as opposed

to the pathology of menstruation. All seem agreed that the discharge of blood, which constitutes the menstrual flow, proceeds from the lining membrane of the uterus. I have employed the term *lining* membrane in preference to that of the generally accepted *mucous* membrane, as I am very much inclined to think, with Emmet, that it is not, strictly speaking, a *mucous* membrane. It neither harmonises in its structure nor its behaviour with any mucous membrane. It seems to me to partake more of the character of the granulating surface of a healing sore than any other structure, and, like healthy granulations, it partakes very much of the nature of a soil on which epithelium grows, this taking origin from the lining of the utricular glands, instead of it becoming an essential part of the tissue, as is the case with the epithelium covering a mucous membrane. Mark me, I do not aver that it is composed of granulations, but I do hold that it resembles this growth in a great many important points. For example, the lining membrane of the uterus, like granulations, is very vascular and spongy, and therefore bleeds with little provocation. It is easily destroyed and readily renewed. Its vitality is less than that of a mucous membrane, and in this it again resembles granulations. In fact, there is hardly a particular in which the two growths do not agree. When maturation of the Graafian vesicle occurs, hyperæmia of the uterus takes place as a physiological sequence, being a result of the increased activity in the ovary. This hyperæmia stimulates the cell-life of the lining membrane of the organ,

and a great proliferation of its cells is the result. These, naturally, are renewed from within outwards, and, in consequence, the superficial layer is shed during the prevalence of the hyperæmia. With this desquamation of the outer layer of the membrane the capillaries are ruptured, and hence the flow proceeds, and the discharge continues for a longer or shorter period in proportion to the extent of bleeding orifices exposed in the process of exfoliation that obtains. The hæmorrhage, in its turn, acts as a depleting agent, thus relieving the congestion, which therefore gradually subsides, and the period passes away. When this epoch of congestion has terminated, and the equilibrium of the normal blood-supply is again established, we find the lining membrane quite renewed, and capable of becoming the nidus of an impregnated ovum. Now, as impregnation usually takes place shortly after the cessation of the menses, it is very appropriate that the ovum should be received into a newly matured, and therefore more vigorous, receptacle. It is at this period we must bear in mind the important part the utricular glands play in this monthly *rôle*. When the superficial layer of membrane is exfoliated, naturally the epithelial covering goes with it, but this is speedily renewed, when the process is complete, by prolongation from the epithelial lining of these innumerable glandular apertures. An analogy to this can frequently be demonstrated when a superficial sore has been formed, and where the granulating surface heals over with amazing rapidity, each little cutaneous gland giving rise to an island of epithelium, which

speedily coalesces with its neighbours, and completes the healing process. If we carry the analogy a little further, and enter just within the regions of pathology, we shall see in how many instances the two surfaces resemble one another. It is a curious fact that epithelium will not extend its growth up an incline. It must have a level surface to develop itself upon. We observe this in sores where the granulations are too prolific. Who ever saw what is commonly known as proud flesh covered with epithelium? No; the redundant growth must either atrophy or be destroyed before we get this result. So with what we designate fungosities of the uterus, which are neither more nor less than an exuberant growth of the lining membrane, and which, moreover, are not covered with epithelium; hence a constant oozing of blood emanates from them. As soon as these are destroyed, the bleeding ceases, the lining membrane becomes covered with epithelium, and the bleeding orifices close. I hope I shall be pardoned for dwelling so long on one view of the natural history of this membrane; but as it appears to me to be nearly correct, my conclusions are naturally based upon it, therefore I have ventured to give the result of my observations as briefly as possible. I have done so because I may frequently have to refer to this hypothesis in the course of my further remarks.

We must bear in mind that the uterine canal in health is not to any extent a secreting cavity; I refer, of course, to that portion above the internal os. As we all know, the cervical canal secretes a

glairy mucus peculiar to itself. We then have the fundus and body in the healthy condition quite inactive (if unimpregnated), except at the monthly epochs. If, therefore, a discharge is observed oozing from the os which differs in character from the cervical secretion, it would suggest the presence of disease; but as any discharge which is not really cervical is apt sooner or later to become purulent, there can then be no difficulty in indicating its source.

If normal menstruation is simply a disintegration of an old stratum of cells which have been thrown off because a more recent and therefore a stronger substratum has taken their place, the old layer degenerating in consequence of their cell-growth being over-stimulated by the monthly hyperæmia, we can understand how this monthly wave produces the menstrual flow in health. So far, however, I have not really touched upon the subject it is my object more particularly to discuss, and before doing so I must still further crave indulgence, as it is most important, so that my views be correctly interpreted, to say a few words about the discharge itself.

The menstrual fluid, I think, is acknowledged on all hands to consist of blood mixed with the *débris* of the exfoliated lining membrane. Now it is a well-established fact that blood in contact with a healthy membrane retains its ability to remain fluid, but if it comes in contact with a foreign body, this imparts to the blood a newly acquired property, which enables it to separate into two distinct substances, each of which differs from

blood itself—viz., clot or fibrin, and liquor sanguinis or serum. This no doubt is the result of a vital action on the part of the blood, induced by contact with a foreign body. Were it not for this endowment, and the capability of the clot to become organised when it remains in contact with vascular lining tissue for a length of time, hæmorrhages would not spontaneously cease as they tend to do. Now we know that a tissue, whose vitality is impaired by inflammation, acts on blood as an irritant and induces coagulation. Likewise, if the vitality of a tissue is reduced by an injury, this catalytic effect is produced by the injured part. We can perceive, then, so long as the lining membrane of the uterus remains healthy, the blood will tend to remain fluid, and thus no pain will result from the actual evacuation of the discharge, because it will ooze away without difficulty: that is to say, if the os is patent. We cannot, of course, designate the periodic engorgement of the uterine tissue as disease, when it *completely* disappears with the cessation of the activity in the ovary, any more than we can call the condition of the stomachic mucous membrane which induces the sensation of hunger, congestion. If, however, the loading of the blood-vessels goes beyond the physiological stage, and inflammation more or less active is the result, an irritant of greater or lesser virulence presents itself, which, according to its intensity, will act more or less energetically in inducing coagulation. The clots which result will therefore require an effort on the part of the uterus to expel them, and, moreover, the contraction of the walls of

the organ will produce a degree of pain relative to the degree of hypersensitiveness which the amount of inflammation entails. The pain, then, is not due entirely to the circumstance that, instead of a fluid flowing freely away, a clot, or a series of clots, have to be expelled by a number of spasmodic efforts of the muscular walls, but also to the fact that these are in a condition of hyperæsthesia, their nerve filaments being already in a highly sensitive condition, consequent on their compression due to the hyperplasia. If, however, the clots were not present, there would be comparatively little aggravation of pain at the molimen. We have this demonstrated in cases where there is a copious catarrhal discharge during the interval of the menses, but where the catamenial flow is alone accompanied by pain. The fact of dysmenorrhœa being due to coagulation taking place within the uterus is readily determined, as the expulsion of the clots is invariably preceded by a discharge of liquor sanguinis.

We, therefore, are led to look upon a tissue weakened by inflammation as a foreign body would be viewed, in so far as it affects the fluidity of the blood. Yet this may gradate so gently and imperceptibly from the line which indicates health to that which points to disease in its most active and potent forms, as to make it quite impossible to recognise a line of demarcation. It is, however, in the lesser degrees of inflammation that the discharge is most copious, and therefore the clots are both larger and more numerous than when the inflammation is more acute, but the intensity of the

pain does not diminish in a like ratio. We may have a condition of the uterine walls which is entirely due to a form of congestion, but which does not add *per se* to the hypersensitiveness of the organ. The result of this minor form of inflammation is hyperplasia accompanied by an œdematous condition of the tissues, arising from a partially obstructed venous return-flow. The result of this is naturally a feeling of weight and bearing down in the pelvis, and there is superadded an abundant catarrh, while the menstrual epoch is marked by a copious and clotted discharge often extending for days beyond the normal period. There is not always pain, however, because the uterus is flabby and patulous, and therefore the discharge escapes rapidly. On the other hand, however, there is frequently very intense suffering, and this occurs notwithstanding the patulous condition of the canal and its normal direction. The question naturally arises, How are we to account for the different symptoms observed? It is obvious, I think, that in the one case we have a simple œdema consequent on an interference with the circulation in the veins; whereas, in the other, we have the hyperplasia due to an inflammatory condition of an active type, where the effused lymph is plastic, and which, therefore, renders the tissues denser than when mere effusion occurs. Again, when inflammation exists the clots are more compact than when they are induced by contact with a merely weakened tissue. Moreover, the blood is more coagulable in the one case than in the other, and, therefore, a greater effort is required to expel these clots.

Then we must not forget that the uterine walls are very much more sensitive in the latter case than in the former. It may be asked, How is it that this condition of things does not tend to spontaneous cure, or why does it not proceed to a more intense degree of inflammation? for we frequently come across cases which have continued for years in very much the same condition locally, though the strength of the patient has gradually been waning. The explanation is that the monthly depletion acts as nature's antiphlogistic, and the excessive catarrh also tends to relieve the overloaded tissues (but it must be borne in mind, that when inflammation is very acute catarrh is frequently absent, because the secreting power of the membrane is *pari passu* paralysed). On the other hand, we should not forget that the anatomical construction and relationship (the canal being a *cul-de-sac*) of the uterus (suspended as it is in the pelvis) tends to promote an unhealthy condition of this nature. If the tone of the muscular fibres is diminished, we can fully understand how the helplessness of the veins is increased, for while the arteries continue to pour blood into the organ, the veins, which are destitute of valves, become engorged and keep up the œdema in consequence of effusion of serum through their walls constantly going on. When this obtains it is, of course, impossible for the lining membrane of the canal to retain its health, as the cell-growth is over-stimulated to such a degree that maturation of the cells never takes place, and they are cast off in unduly large quantities, passing away along with a serous

exudation, either as pus or a muco-purulent discharge, which is very copious and not infrequently has imparted to it a fœtid odour. We thus have a degenerated lining membrane taking the place of the healthy, the consequence being that it readily breaks down at the monthly period and bleeds profusely, not only while the activity of the ovary continues (for the overloaded condition of the arteries persists beyond this), but, for a time afterwards, varying from a few days to the whole period which ought to be that of cessation. When the discharge is so persistent as to give rise to menorrhagia or metrorrhagia, as a rule, there is not much pain nor coagula either, for the reason that the bleeding relieves the congestion, and the flow is so free that the blood does not remain long enough in the canal to permit of coagulation taking place there. If, however, the inflammation is more intense than this, the hæmorrhage is less, and clots within the uterus are more numerous. This arises from the irritant being more decided, and, therefore, blood-clots are more readily formed at the orifice of the ruptured capillaries. Nay, more, clots may and actually do form within the vessels themselves, and thus arrest the hæmorrhage, which otherwise would relieve the congested tissues, but this not taking place effusion of lymph goes on into the parenchyma, which lymph becomes organised, and produces rigidity and tension of the uterine walls.

Such a condition of the womb is associated with acute hyperæsthesia, from the compression which the nerve filaments endure, and consequently every movement of the body, and to a much greater

degree every contraction of the uterine fibres, are accompanied by intense suffering. This pain, however, is not confined to the actual seat of the irritation, but radiates throughout the whole area supplied by the trunks of the nerves, of which these are the peripheries. Moreover, this congestion reacts on the ovaries through excess of blood pressure being thrown upon them by the surcharged ovarian veins, and through these the whole pelvic vascular system is disorganised, either by direct venous continuity or through the vasomotor nervous apparatus, or both. When this condition of the uterus exists we have the menstrual discharge diminished in quantity, and that being exposed to a more intense irritant coagulates more rapidly, and is retained, because of its scantiness, for a longer period. It, therefore, necessitates a greater effort for its expulsion, and, the æsthesia of the organ being acute, the pain bears a close relation to the size of the os. This, however, cannot possibly be designated obstructive dysmenorrhœa, as many have named it, because, if the inflammation did not exist, in the majority of cases the os is quite patent enough to permit the normal discharge *of blood* to escape without pain. I will illustrate this by detailing a case which interested me very much. Mrs. K., aged 28, consulted me in May, 1883. She was married at 24; menstruated for the first time at 16, and continued to do so regularly and without pain till she was 20, after which she began to suffer at each catamenial period. This gradually increased in severity, and as it did so the discharge became

more and more clotted, till eventually a complete cast of the uterine cavity was thrown off at each period. This was always preceded by severe suffering, accompanied by a red, watery discharge which continued for two days, when the pain would come to a climax and the cast be expelled. With this the pain ceased, though a few similar clots would come away with some fluid discharge for another day, but with very little inconvenience. There was dyspareunia, also a copious muco-purulent discharge. Vaginal examination disclosed hyperplasia. The uterus was acutely sensitive to touch. When the sound was passed, the internal os was found to be spasmodically stenotic, and the canal beyond very painful when the sound was in contact with the lining membrane. The general health was very indifferent, and there was great nervous prostration with despondency. The bowels were constipated, and there was polyuria.

General treatment consisted in the administration of an enema every second day, and a pill containing $2\frac{1}{2}$ grs. valerianate of zinc and 2 grs. extract of conium was ordered to be taken forenoon and afternoon. Local treatment: I dilated the internal os twice a week, and applied to the whole area of the canal a saturated solution of iodine in carbolic acid (iodised phenol), and a tampon soaked in glycerine of alum and boracic acid was introduced into the vagina and placed in contact with the uterus. This treatment was continued for four months, at the end of which time the hyperplasia was reduced and the metritis removed, after which the menses were discharged free from

clots and without pain. She shortly afterwards became pregnant, and was delivered at the full time of a well-nourished child. I have seen her frequently since, and she informs me she is quite free from suffering, and that her health is completely re-established.

This is, perhaps, the most perfect example of dysmenorrhœa accompanied by clotted discharge and due to endometritis that I have seen, though I hold it is only typical of the effect of an inflamed surface upon blood which is in contact with it. Had this patient come under my observation within the past five or six years, I feel convinced that I should have inaugurated the treatment by curetting the endometrium, by which means the beneficial results would have been very much accelerated.

On examining the casts which were expelled at each menstrual period, it was observed that their short retention in the uterine cavity had resulted in their taking on a kind of fibrous formation, due to their having become to a certain extent partially organised. I have no doubt that such cases are frequently confounded with membranous dysmenorrhœa, whereas the casts, or rather masks, which are pathognomonic of this disorder, are the results of a more intense form of dysmenorrhœa than that which produces these coagula. If the inflammation is still more intense, plastic lymph is effused into the superficial layer of the membrane, whose vitality has been destroyed by the same agency, and it is shed *en masse*, and expelled as a complete mask of the cavity, the exfoliated cellular structure

having been rendered coherent by its being impregnated with the effused lymph, just as we have a slough thrown off when inflammation attacks the granulations of a healing sore. Again, in croupous dysmenorrhœa we have this plastic lymph partly organised, and retaining the contour of the cavity when it has been deposited on the surface of the lining membrane.

It is worthy of observation that the more severe the inflammatory symptoms are, and the more intense the dysmenorrhœa is, the discharge, as a rule, is in a like proportion scantier, and in the ratio of the pain losing in severity the discharge becomes more copious. This is only to be expected when we take into account that the more acute the inflammation, the farther removed it becomes from healthy structure, and consequently exerts its catalytic power more powerfully in producing coagulation, and therefore lessens the tendency of the ruptured vessels to bleed. Take a case of slight congestion of the integument as an example illustrating what I mean to demonstrate; the congestion produced by cupping, say, when an incision is made into it, what is the result? A copious flow of blood, of course. How different is the effect when an intensely inflamed part of the integument is incised, a carbuncle for example! Here effusion has taken place into the cellular tissue consequent upon the occlusion of the capillaries by clots having formed within them, this being due to the blood having been acted upon by the irritant destroying either partially or completely the vitality of their walls. We shall have in this instance compara-

tively little hæmorrhage, and moreover, we shall be able to note how much more rapidly the effused blood coagulates than when it flows from a wound when the congestion is less intense, thus accounting for the more rapid cessation of the bleeding in the one case than in the other. It is not unnatural to conclude, then, that the same argument holds good in uterine hæmorrhages. But, it may be asked, how does it happen that the cast in fibrous dysmenorrhœa is firm and coherent, while a slough is soft and flabby? Well, in the one example, that of the cast, it has not been exposed to the influences of decomposition, the uterine canal being at the time aseptic, and in consequence it is not at once deprived of all its vitality, and, therefore, becomes slightly organised by remaining in contact with vital tissue; whereas in the slough, before it is actually dead, it becomes a prey to the germs of putrefaction which surround it, and thus speedily breaks down by decomposition. We perceive, then, that when the inflammation is less intense, we have a diminished tendency to occlusion of the uterine capillaries than when it is severe, and consequently there is a freer discharge with which there is comparatively little pain; but as a result of the continued hyperæmia a hyperplastic and flabby condition of the uterus takes place, and this want of tonicity of the walls favours the liability to the occurrence of flexions. When these become established, although they may not actually act mechanically in obstructing the flow, a much more painful array of symptoms is to be dreaded, for although the calibre of the canal at

the seat of flexion may not be interfered with sufficiently to obstruct the exit of the discharge, yet, in consequence of the bend interfering with the venous return flow, the body and fundus take on a more decided inflammatory condition, and are thereby rendered much more sensitive than before. This is due to the walls becoming more rigid, and the nerve filaments being unduly compressed. When the menstrual period comes round, therefore, this morbid condition is still further aggravated by any contractile effort being accompanied by increased pressure for the time being, and consequently by more intense suffering. The transition from flaccidity to rigidity of the uterine walls in flexions is, of course, gradual, and it is not necessary that rigidity should result at all, for if the flexion is recognised at an early stage a vaginal pessary will prove of immense service, and a speedy cure will result if the metritis is treated *pari passu*. If, however, the latter condition has been established, it would be highly dangerous to force the uterus into its normal position, and retain it there, without first taking measures to reduce the inflammatory condition of the walls by tampons and intra-uterine medication. I have seen most serious consequences supervene upon this irrational treatment. Let me give details of a case in point, which I copy from my notes. Miss L. consulted me on April 28th, 1883. She was suffering from acute retroflexion of the uterus, and was wearing a Hodge's pessary, which she said had never given her any relief, but, on the contrary, aggravated her symptoms. A year and a half before she had sus-

tained a severe fall while playing lawn tennis, and from that date her sufferings began. She had been under treatment for some time by the family attendant without deriving any benefit. She was then taken by him to a specialist, who took her in charge and treated her in the orthodox way by means of pessaries and rest. This was continued for five months without the slightest benefit resulting, when he said he could do no more for her, and advised her to go to Edinburgh and consult an eminent gynæcologist there. The patient naturally shrank from the idea of leaving her home, and I was asked to see her. As has been stated, there was retroflexion, but arising from this there was regularly recurring most severe dysmenorrhœa and menorrhagia, which so prostrated the poor girl that the intervals between the menses were simply occupied in preparing for the next epoch, when the strength was again completely exhausted. This unsatisfactory state of matters had gone on for months, and the patient and her friends began to lose all hope of her ever being well again. She was unable to stand or walk without severe pain, and in every sense of the word she was an invalid.

On making a vaginal examination, I found the os quite patent, and exuding from it an acrid, purulent discharge, which had given rise to vaginitis, so much so that the mere passing of the finger along the vagina caused intense pain. The uterus, but especially the fundus, was likewise acutely sensitive to the touch. Metritis, therefore, accompanied the malposition, and this was evidently the

cause of the dysmenorrhœa and menorrhagia. The metritis, on the other hand, was evidently due to the disturbance of the circulation consequent upon the flexion. I did not attempt to pass the sound, but contented myself with gently supporting the fundus by means of a medicated tampon, which I renewed twice a week, the object being to deplete the congested tissues and constringe the uterine walls and those of the vagina. Gradually but surely relief ensued, so much so that at the end of fourteen days I was able to pass the applicator charged with iodised phenol into the uterine canal, and thus attack the endometritis directly, which aided very much the treatment directed to the inflammation of the parenchyma. The result was that the discharge lost its purulent character in a few weeks, and the vaginitis rapidly disappeared. A great point of advantage was thus gained, as the displaced and otherwise diseased organ could now be treated without entailing much suffering, whereas, until the excessive sensitiveness of the vagina had been removed, the local applications produced great pain. The tampon was applied bi-weekly for two months, and the endometrium was swabbed every eight or ten days with iodised phenol. At the end of this time the dysmenorrhœa and menorrhagia were very much abated; the backache, which had been such a marked feature in the disease, was almost gone; and the patient, instead of being low-spirited and depressed, became bright and cheerful. For two months more I saw her once a week, by the end of which time all symptoms of disease had disappeared, and the position of the

womb was normal. I may add that for a considerable time afterwards the patient was under my observation once a month, but she eventually became so well as to be able to resume her wonted duties.

It will be seen, then, that I do not hold in much favour the views so much advocated by some, that flexions act mechanically in producing dysmenorrhœa; however, I would not like to deny that there may be *some* truth in such a theory, but it is so far removed from the main cause that prominence ought not to be given to it, for if this is done our treatment is sure to be productive of but little relief at the best. I have frequently observed cases of severe dysmenorrhœa when the direction of the canal was normal and quite patulous, so much so that the sound passed with the greatest ease. In these cases, however, metritis was present, and when this was removed the menstruation became painless, and the general health rapidly improved. Again, I have not infrequently seen cases of traumatic retroflexion due to a fall, result in severe metrorrhagia, without the slightest pain accompanying it, and certainly where no evidence of obstruction was present. Here you have an unloading of the overcharged veins, the hæmorrhage keeping down inflammatory action by not permitting congestion to supervene. In these cases, as soon as the malposition was rectified, and the uterus retained in its normal position, the hæmorrhage ceased, proving, I think, conclusively, that it was the interference with the venous return flow that caused the overstrain upon these vessels.

But, on the other hand, when the flexion takes place gradually in a uterus which was not healthy to begin with, the congestion becomes gradually intensified, and the blood coagulates as it is effused, so that which otherwise might be a copious flow, to a great extent is checked, though really its duration is not infrequently prolonged as a consequence of the displacement.

The more I see of dysmenorrhœa, the more convinced do I become that the mechanical obstruction theory is weak. I cannot view stenosis, even when it exists, as a cause *per se* of this disorder. If the os is so far patent as to permit the passage of a very fine uterine probe, and the endometrium is healthy, it is quite possible for the discharge to escape without pain. Yet, I can understand, if the discharge is profuse, it may flow from the lining membrane in a greater amount than it can be evacuated, and so give rise to painful uterine spasm; but if this contraction were the sole cause of the pain, we should have the pain continuing throughout the whole period of the flow, instead of which it generally subsides after the first or second day, or, in other words, when the depletion has relieved the congestion of the organ. A stenotic os, then, may, and does frequently, become a factor in producing an irritable and sensitive condition of the parts, and will eventually lead to inflammation. If this narrowing of the outlet were really the sole cause of the pain in these cases, we should be certain of a cure were it dilated or incised; but how frequently do these operations fail to give relief if measures are not likewise taken to improve the

health of the organ itself! It very frequently transpires that a woman with stenosis suffers more at one time than another, and this, although the calibre of the canal remains *in statu quo*, showing, I hold, that the narrow aperture does not explain the *casus morbi*. Constipation is a notable accessory to the production of the pain, and this because a loaded colon and rectum interfere not only with the pelvic circulation, but also with the tone of the system at large, inducing an overcharged state of the veins and, therefore, a more copious discharge, also reducing the general tone, which develops a neurotic condition. If this sluggish condition of the bowels is removed, in many instances the dysmenorrhœa will cease, simply because the quantity of the discharge is reduced and the general tone improved. But it is not always an easy matter to get hold of such cases in their initial stages, on account of the delicacy that naturally exists in young girls to submit to any kind of treatment for dysmenorrhœa. So much, indeed, is this the case that it has come to be looked upon as a natural consequence of menstruation, and so it is allowed to develop till it is beyond the reach of simple remedies. When, therefore, this state of matters is allowed to continue for a lengthened period, the organ, in consequence of repeated spasmodic efforts and continuous loss of tone, becomes the seat of disease, so that we have not only a hypersensitive, but an inflamed uterus to deal with. We then have a clotted discharge, and such a prolongation of the period that it merits the title of menorrhagia. It is because of this

free discharge, however, that the pain ceases when the flow begins to be copious, from the fact, which I have so often pointed out, that the overloaded vessels relieve themselves for the time being, and the congestion is in abeyance, nature acting as her own physician.

It will thus be perceived that I look upon a hypersensitive condition of the uterine walls, due to an inflammatory condition, as the essential cause of the majority of cases of dysmenorrhœa, and this for the following reasons :—1. A congested uterus being already hyperæmic has this condition aggravated at each molimen. 2. Because every contraction of its walls is accompanied by intense pain in consequence of their congested condition. 3. Because the inflamed tissue exerts the influence of an irritant upon the constituents of the blood, causing it to separate into clot and liquor sanguinis, the clot necessitating painful uterine contractions for its expulsion. We must bear in mind that dysmenorrhœa is not invariably uterine, but may be of ovarian origin.

We, however, meet with many other conditions besides those mentioned which tend to set up inflammatory action in the womb, and consequent dysmenorrhœa, and perhaps one of the most common is an elongated cervix. Here we may have no narrowing of the canal, and yet it is a frequent source of mischief, and this is proved by the fact that, although the dysmenorrhœa is removed by judicious treatment, it will tend to return again, and this almost invariably, if we do not take the precaution to remove the redundant

tissue. So much am I convinced of this that I have for some time absolutely refused to have anything at all to do with cases of dysmenorrhœa where this deformity exists, without I first get permission to remove what is abnormally developed, and not infrequently this has been all the treatment required.

Much, however, as I adhere to the belief that an inflamed condition of the uterine tissue is the chief factor in producing the painful affection, I do not for a moment wish it to be imagined that I believe this accounts for every case; but as during the past fifteen years over 5,000 cases of this disorder have come under my observation, and as I have found that most of these have been the subjects of endometritis, and as it was only when this was removed that the painful symptoms disappeared, it cannot be a matter of surprise that my convictions are what I have expressed.

The cause of metritis may, and most assuredly does, proceed from a variety of sources. It may, and frequently does, arise from an atonic state of the system at large, inducing flaccidity of the uterine walls, and, moreover, interfering with the circulation in the uterus by diminishing the heart's power. If atony of the heart exists, then the uterus, from its anatomical relation to the neighbouring parts, is the first, or one of the first organs to suffer, so that in the treatment of all uterine disorders it becomes of necessity a part of our plan of action to take means to restore the general health simultaneously with our efforts to relieve the local symptoms. A first duty, then, is to take particu-

lar note of the condition of the bowels, for if these be inactive, we have present a common source of anæmia and bad health, in *young* women especially. Not only does a sluggish action of the colon act mechanically by interfering with the circulation in the pelvis, but in not a few instances by actually displacing the uterus. It also permits of a constant absorption of fœtid matter into the blood, which destroys the health and even the vitality of the red corpuscles, thus reducing their number and quality. By this not only is the blood deteriorated, but through it the nervous system is injured, and the whole of the functions of the organism thrown out of gear. I do not think I need remark how almost invariably this condition of things is prevalent among delicate young ladies, and how dire are the consequences; but I must confess I am surprised to observe how frequently this important point is overlooked by medical men, and to what a small degree it is recognised as a *casus morbi*. It would seem as if they were satisfied if they order a dose of laxative medicine occasionally. But allow me to insist that this will not suffice. The bowel must be emptied thoroughly every day, or second day at least, and this can only be accomplished by a systematic and prolonged use of the enema, together with the administration of a tonic which will tend to restore the functions of the atonic muscular fibres of the intestine. It were time to a great extent wasted in the treatment of uterine disease if we neglect this important feature of the patient's condition. But to return to the subject more immediately under discussion: other

ascribed causes of dysmenorrhœa must be referred to.

1. It may arise in conjunction with stenosis, but, as I have before observed, the stenosis cannot be the sole cause, or why does the pain cease when the flow has become thoroughly established? Or why do some women suffer while others do not, the outlet being of equal calibre in the various cases? Or, again, why do some suffer at one time and not at another?

2. Dysmenorrhœa may accompany a neuralgic condition of the uterine walls, and frequently does so, for well we know that a neuralgic woman always suffers most at the catamenia, not only in the pelvic organs, but elsewhere, and it is quite natural that the activity of the uterus at that time will render it doubly liable to neuralgia.

3. Dysmenorrhœa has been said to be due to spasm of the uterus, and has been compared to the spasm which produces asthma; and by way of argument, Dr. Matthews Duncan says: "Asthma is cured by a copious secretion of the mucous membrane, just as dysmenorrhœa is generally relieved when the menses flow freely." Now, I hold that the very reverse is the case, for it is only when the spasm in asthma ceases somewhat that the mucous membrane is *able* to secrete mucus to any extent. When the spasm is severe, the nerve centres which control the mucous secretion by reflex action are paralysed temporarily, and it is only when the irritating effect of the spasm subsides that they are able to act, when the modified irritation which remains stimulates them to free

action, and a copious flow of mucus results; just as when a severe inflammation of the Schneiderian membrane occurs *no* mucus is secreted, but when this subsides somewhat the more intense irritant ceases to act so powerfully on the ganglionic centres, and in consequence their activity is restored and afterwards stimulated by the moderate degree of irritation which the less congested condition of the mucous membrane conveys through their afferent filaments. So that the relief in asthma when mucus is secreted freely is *not* "post hoc propter hoc," whereas the relief obtained in dysmenorrhœa when the flow is established *is* "post hoc propter hoc."

4. The obstruction theory has had many advocates, amongst whom is numbered Dr. Barnes and the lamented Dr. Marion Sims; but, unwilling as I am to differ from these veterans in the science of gynæcology, I must confess that I fail to see how fluid blood should be less able to escape without pain than the catarrhal discharge which is so copiously excreted in the inter-catamenial period, nor can I understand why the pain ceases after the menstrual flow has been thoroughly established.

But my object here is to give my views on this important subject, and not to criticise those of others, and as I have expounded these explicitly, I must leave the subject in my readers' hands to adopt or reject as they think fit.

DISEASES OF THE UTERINE ADNEXA.

Many years have elapsed since I first attempted to detail my experience in the treatment of diseased tubes and ovaries, and as this experience has been gathered from an extensive hospital as well as private practice, I think I am fairly warranted in laying it before the Profession.

As it is to be expected, my opinions have from time to time undergone considerable modification; sentimentality, too, may to a very large extent have clouded my judgment; the consequence of this was that, prejudiced by what might be designated bigotry, I at one time looked upon every man who resorted to surgery in the treatment of disease of the uterine adnexa, somewhat in the light of a traitor to his race. Now, however, I am thankful to say, my vision has improved considerably, and I can see the errors which I committed in being so dogmatic in the past, and I am quite willing to confess my faults, and have considerable satisfaction in being (though to a modified degree) permitted to join the ranks of those to whom I was at one time so strenuously opposed. At the same time, though quite admitting the necessity of surgical interference in many instances, I still hold that operative measures have frequently been,

and still are often, had recourse to when less heroic treatment would have yielded much more satisfactory results.

Of course, it is not difficult to comprehend that if the ovaries or tubes are disorganised and rendered quite unfit to perform their functions, and are, at the same time, the cause of acute suffering and impaired health, no good end could possibly be attained by retaining them. If disease has proceeded to such an extent as to render these organs useless, while at the same time they constitute a source of danger to the patient, it is not difficult to arrive at the conclusion that their removal would not, *per se*, in any way incapacitate the individual, disease having taken precedence in bringing this about. If, however, the organs are not incompetent to perform their functions *in toto*, then a great deal can be done by medical treatment to restore them to comparative health, or, if surgical measures do become absolutely necessary, and if the tubes remain healthy, resection of the diseased portion will yield the most satisfactory results that, in the circumstances, can possibly be obtained.

No one will deny that much unnecessary mutilation of women has tarnished abdominal surgery within the past twenty years, oöphorectomy having been ruthlessly resorted to in innumerable instances when a woman happened to complain of ovarian irritation. It was necessary, therefore, that a stand should be taken to check this, and although many gynæcologists were inclined to go to the opposite extreme, yet their action had the effect of placing gynæcology in a much more healthy posi-

tion than it had ever occupied previously. With increasing knowledge one is led forcibly to the conclusion that a very large proportion of cases which at one time were thought to be incurable except by operation may now be restored by medical measures.

I will now proceed to consider that class of disease which, with every probability of success, may be treated medically. When dwelling on this part of my subject I need hardly insist upon the desirability of obtaining an exact diagnosis of the disease at an early stage. It is, therefore, to the general practitioner we must look for assistance. The public, too, should be better educated on this point, and ought to be taught to be more alive to the necessity of having the causes of pain inquired carefully into and explained without unnecessary delay. On this point one cannot be too emphatic. If there is dysmenorrhœa and pain over the region of one or both ovaries, and if this is aggravated by exercise, external pressure, or defæcation, or accentuated by hanging about on one's feet, more especially if the pain tends to extend down the limb or limbs, no time should be lost in not only ascertaining the causes of suffering, but in removing the pathological condition. If women would not take it for granted, as they are so much inclined to do, that pain at the menstrual periods and in the region of the ovaries is a thing that is to be expected and ignored till it becomes unbearable, we should hear much less of surgical disease of the uterus and its appendages.

It must be conceded, I think, that neither the

ovaries nor tubes are prone to disease arising independently of the uterus. As a rule, indeed I may say invariably, disease in these organs is secondary either to some traumatic or idiopathic affection of the endometrium, and especially of the cervical portion, this being almost always the point where the invasion commences. It is admitted, almost on every hand, that gonorrhœal infection is a common source of pyo-salpinx. Now this can only result from the disease spreading by continuity of tissue. In the same way salpingitis arises when endometritis of a more benign type is present. But if this is permitted to go unchecked, it is not at all uncommon for pyo-salpinx or hæmato-salpinx to supervene upon this also. If, then, the origin of the mischief is in the uterus, it is only rational that we should direct our special attention to the primarily diseased organ, and endeavour to restore its integrity. Without attempting to go into the pathology of oöphoritis and its sequelæ, I may repeat what I have frequently stated before, that this also takes its origin in uterine trouble, when it is not secondary to salpingitis or perimetritis; but then it must be remembered that these affections, without exception, are secondary to disease of the endometrium, so that we are obliged to revert to the uterus as the first cause.

Cervical disease would seem to be the most potent factor in conveying to, or perhaps it would be more accurate to say, in being the starting point of, disease in the ovaries. This is probably effected through the vaso-motor system in a certain number

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of instances. We must, however, bear in mind the fact that in laceration of the cervix, oöphoritis of a more acute type, and that accompanied by considerable increase of bulk and intense hyperæsthesia, frequently follows very rapidly upon the injury. This would lead one to suppose that the lymphatics play a most unimportant part in its history. If, then, it is admitted that the uterus being at fault renders the tubes and ovaries liable to disease, it stands to reason that until the health of this organ is restored the latter cannot possibly have their health re-established. It is impossible to lay too much stress upon this important factor. Our first duty, then, is to attack the uterine lesion or lesions, as, if these are not removed, it would be impossible to obtain the desired permanent, satisfactory result. If the cervix is lacerated, no line of treatment will prove permanently satisfactory until this is attended to. If there is endometritis present, the endometrium should, in the first instance, be curetted, and afterwards treated by the weekly or bi-weekly applications of iodised phenol and vaginal tampons soaked in glycerine of alum and boracic acid. Doubtless the desired end might be obtained by simply treating the endometrium as indicated, but curetting, in my hands, has proved abundantly to answer a double purpose; in the first instance, it lays bare the uterine tissue and enables the iodised phenol to come directly in contact with it; moreover, it has a second effect, and tends to promote involution of the hypertrophied tissue—that is to say, if the patient is kept in bed for some days

after the operation, and to obtain a satisfactory result this should be insisted upon. If the disease which exists in the appendages has not proceeded to actual organic change in the parts, we shall find that, as a rule, this will disappear *pari passu* with the recovery of the uterus. In many cases it will be advisable to dip the uterine end of the tampon in a 10 per cent. solution of ichthyol in glycerine. This addition tends very much to promote absorption of any inflammatory thickening that may exist.

While the foregoing method of treatment has proved eminently satisfactory in my hands, further experience has demonstrated the fact that, instead of applying tampons saturated in boracic acid and glycerine, and afterwards dipped in a 10 per cent. solution of ichthyol, if they are entirely saturated in a 10 per cent. solution of ichthyol and glycerine more rapid and gratifying results are obtained. When tampons of this nature are introduced, it is always desirable that they be removed at the end of forty-eight hours, and it will be found that if, coincident with the application of these tampons, ichthyol is administered internally, the beneficial results will be attained with much greater rapidity. The method of administering ichthyol which I have adopted is by means of tabloids, each containing five grains, two of which should be given three times a day about an hour after food. Of course, important points, such as strict attention to the bowels, avoidance of over-fatigue, comfortable clothing, good food, etc., must all have careful attention.

It may be remembered by some of my readers that within the past few years I published a paper on the "Pathogenesis of Oöphoritis," in which I compared a hypertrophied and tender ovary to a bubo. In this essay I propounded the theory that the ovaries were secondarily affected through the channel of the lymphatics. Although this hypothesis was at the time thought untenable, I am gratified to find that its accuracy is now placed beyond all doubt by the results which Poirier has obtained. Now, as my treatment has altogether been based upon the theory then advanced, and as the results in such a large majority of instances quite justified my holding to it, it is quite refreshing to learn that theory has now blossomed into fact, as Poirier has abundantly demonstrated. This observer has experimented on over three hundred female subjects, and has obtained results of utmost value to the gynæcologist, shedding, as they do, a new light on the pathology of the female pelvis. He points out that there are two sets of uterine lymphatics, one set surrounding the cervix and extending laterally into the parametric tissues along the lower borders of the broad ligaments.

The other set follows the course of the ovarian artery, along the upper margins of the broad ligaments, and takes origin in a network surrounding the corpus uteri. The efferents of the latter consist of two or three large vessels, and lie between the tube and ovary, receiving numerous branches from these. Now, as valves are comparatively few in number in these vessels, retrograde infection is not only quite possible, but

highly probable. By these channels, therefore, septic matter can readily be conveyed to the ovaries from the uterus, and not only to the ovaries, but to the peritoneum also. In this way can be explained the occurrence of puerperal fever, where decomposing matter has been permitted to localise itself within the uterus: hence the great value of curetting in all cases of puerperal fever, by which method the *materies morbi* are removed, and the cause of the fever, as a natural consequence, ceases to exist. Indeed, it would seem to be a matter of fact that it is by the networks of these lymphatics that septic mischief is conveyed to the pelvic cavity. Poirier further holds that the idea of inflammation extending from the endometrium by continuity through the tubes to the ovaries is quite erroneous, and I think he proves this conclusively when he says that, "if this were true, then the distal extremities of the tubes would be found to be diseased." Moreover, he holds that salpingitis is invariably the result of extension of the disease along the mucous membrane of the tubes, the lymphatics of the uterus and those of the tubes not being intimately connected.

This assertion he further justifies by his statement of the fact that the lumbar glands are never affected in tubal inflammation. On the other hand, the ovarian and uterine lymphatic systems have direct communication with each other, so that ovarian disease can readily be consequent upon endometritis without the tube being in any way concerned.

In the light of these researches, then, it is not

difficult to comprehend the *rationale* of the treatment which I have so long upheld in disease of the adnexa.

Having dwelt at such length on this portion of my subject, it would be quite out of place to enter as completely as I should have liked upon the surgical aspect of the question. We all are fully cognisant of the fact that in a large number of instances all the medical treatment in the world would be futile, and that surgical measures alone will prove of any avail. When we read the arguments of some men who are averse to the operation, and who cite a series of results which supervene upon it, we cannot but be struck by their weakness. Brodwitz, of Strassburg, who is evidently opposed to the operation, gives the following sequelæ as arguments against it. Molimina, congestion, cardiac disturbances, flushing, and vertigo, together with diminution of the sexual feelings, melancholia, and forgetfulness. But what observer will deny the existence of all these symptoms in individuals affected by the diseases which call for operation, and how rarely is it that symptoms persist afterwards? In fact, the rule is the complete disappearance of all the symptoms which have been held up as arguments against the operation.

Now with regard to the following essentials as being worthy of attention when operation has been decided upon.

1st. Absolute cleanliness on the part of operator, assistants, nurses, and appliances.

2nd. Make your incision as small as possible, consistent with comfort.

3rd. The most rigidly careful attention to the toilette of the peritoneum.

4th. The nursing afterwards.

If these four points are duly attended to, the death-rate will be *nil*, or, at all events, nearly so.

Notwithstanding the fact, however, that the operation is so free from risk to the patient, there are many cases in which it is not justifiable to resort to surgery until a fair trial has been given to medical measures.

In the hospital with which I have the honour of being associated since its foundation, a yearly increasing number of cases of ovarian disease have come under observation. Notwithstanding this, however, the number of oöphorectomies have decreased to a marvellous extent, this being due to carrying out the line of treatment indicated in the preceding pages. I have often been struck with the fact that enlargements of the ovaries and tubes, which at the first glance would lead one to conclude that organic change had actually taken place, and would almost warrant one to adopt surgical measures, are, in the majority of instances, amenable to medical treatment, always provided that the uterine mischief which invariably accompanies and has preceded the oöphoritis, is removed. Frequently I have had patients who have come under my care, and who have previously consulted eminent gynæcologists who have advised the removal of the organs, recovering completely after a course of treatment which would occupy less time than complete convalescence after operation would entail, for it must be borne in mind that a patient who

has had her ovaries removed can never be said to have completely recovered from the operation under a less period than two years. Now, as a rule, the time required for the necessary medical treatment does not average more than six months. Does it not, therefore, behove us, where there is the least doubt, to give the patient the benefit of that doubt, and place her under the treatment which I advocate, which by no possible chance can prove injurious? while, on the other hand, the prospects of recovery are very great, and the fact of her having undergone this treatment does not militate in the least degree against operation, should it have failed.

Speaking from my own experience, although my opportunities are very much larger at the present day than they have ever been before, I have not found it necessary to operate in one case for twenty that I thought it my duty to treat surgically some years ago. Yet I must confess that in not a few instances, after protracted trial of the less heroic measures, operation has become a necessity as a *dernier ressort*. These, however, are comparatively so few that I have no hesitation in strongly advocating giving the medical precedence to the surgical treatment.

INTRA-UTERINE MEDICATION AND ITS RELATION TO THE TREATMENT OF FLEXIONS.

In bringing the subject of intra-uterine medication before my readers, I may preface my remarks by stating that I consider it the only useful method of treating the majority of uterine disorders, and it will be my aim in this chapter to demonstrate the numerous advantages which, as a natural consequence, follow its judicious, careful, and regular employment.

The physiology of the uterus and its appendages is, to my mind, in a far from satisfactory position; the theories which I have formulated, and the conclusions which I have arrived at, based upon these theories, may therefore be considered crude and difficult of acceptance. Notwithstanding this possibility, I am so sufficiently confident in their correctness, that I have no hesitation in submitting them to the kindly consideration and judgment of my professional brethren. At the risk of repeating myself I would here state, that so far as my experience extends I have been forced to the conclusion that the *fons et origo mali* in the great bulk of the various affections to which the tubes and ovaries are liable, are due to a primary affection of

the uterus; therefore, through its medium we obtain a power not only to avert such disorders, but to arrest them in their progress and development, and also to restore these organs to a healthy condition when disease has taken even a firm hold upon them.

When flexions of the uterus occur these are, by the large majority of the profession, attributed to a lack of support from what are termed the uterine ligaments. It must not be inferred from this remark that I do not recognise the great utility of some of these, amongst which I would specially name the sacro-uterine ligaments. The vagina and, in relation to it, the perineum, are the most important structures which the uterus depends upon for its retention in its normal position; but when we come to speak of the broad and round ligaments, I must frankly state that I attach little or no importance to these as uterine supports. The anatomical relation of the pregnant uterus to the broad and round ligaments will, I think, be ample argument in support of this view. On the other hand, I feel that sufficient weight is not given to the importance of an intact vagina and perineum, which act in conjunction with atmospheric pressure as the most important supports the uterus possesses. This condition of the external parts, together with a normal rigidity of the uterine walls, which receive considerable power of retaining their erect position by their tubular formation, and the comparatively light weight of the organ, have more influence in enabling the uterus to retain its position and health than all the ligaments combined.

Dr. Mann, of the University of Buffalo, says:— "The uterine artery gives off a large number of parallel branches, which run at right angles to the main trunk and anastomose freely with the corresponding branches on the opposite side, so the uterus may be regarded as composed of numerous segments, each of which has its independent vascular supply. It is obvious, without argument, that no inflexion, however sharp, can cause any considerable interruption of the circulation either above or below the point of flexion." What, therefore, Professor Mann advances as an argument against the possibility of engorgement taking place when a flexion exists, rather strengthens my view than otherwise. If it does so, it cannot but have the effect of rendering his theory untenable. It is because a flexion tends to interfere so little with the afferent vessels on account of their greater power of resisting pressure, and because the efferent vessels are so easily compressed in any kind or degree of flexions, that engorgement of these, with its evil consequences, almost invariably supervenes. The weight of the organ beyond the flexion becomes considerably increased, while the tonicity of its walls is coincidently reduced. As a sequence a flaccid condition ensues, and a tendency to flexion is thereby induced.

If we view a healthy uterus we cannot but be struck with its comparatively pallid appearance, and yet we learn from a study of its minute anatomy how vast is the network of blood-vessels and lymphatics it contains. How, then, are we to account for its pallor? Doubtless it is due to the

tonus of its muscular walls, and it is to this point I desire to direct special attention. So long as the tonic condition of the uterine structure exists, flexion is impossible, so that this must of necessity be departed from either physiologically (which condition obtains just prior to, and during menstruation) or pathologically, before a flexion can possibly occur. If, however, the tonicity of the muscular fibres which regulate the arterial, and more especially the venous circulation, be removed, then engorgement, and the flaccid condition of the walls which I have just referred to, are natural results. Thus we can account for violent concussions on the sacrum producing retroflexions, when the accident occurs near the menstrual epoch.

In support of this view, I may state that, in my experience, every traumatic case of retroflexion in nulliparous women, which has come under my observation, has occurred just about the menstrual period. Moreover, what is most liable to aggravate the tendency to flexion and accentuate it, is, that in consequence of the pain and discomfort which as a matter of course ensue, the patient is put to bed where she is inclined to lie upon her back, and in all probability permits the rectum to become overloaded, in consequence of which the uterus is, by the weight of scybala which accumulates above the flexion, firmly retained in its abnormal position. It is not difficult to comprehend then, that an important point in the treatment of traumatic flexions is, to be assured that the rectum is emptied every day.

I now come to consider the most important

question of intra-uterine medication, and how this is to be successfully applied, and also what is the most useful application to employ? Apostoli advocates electricity, but I merely refer to this, as I have never been able to realise any advantages it is supposed to possess. Moreover, none of his apostles seem to have the remotest idea as to its mode of action, or which pole should be inserted in different circumstances. Any effect that results must be very similar to that produced by other applications, namely, providing a stimulus to the muscular fibre of the uterine walls. This causes them to contract spasmodically, and thus, for the time being, aids the venous circulation, by expelling the contents of the surcharged veins and sinuses. It is long since I lost count of the number of cases of endometritis that have come under my observation and treatment, and I flatter myself that the results obtained will compare very favourably with those of Apostoli.

It would be superfluous for me to refer to the variety of medicaments which have been, and are still in vogue, for the purpose of treating the endometrium. I will, therefore, confine myself to the preparation which has yielded the most satisfactory results in my hands, namely, iodised phenol, the proportions being 320 grains of iodine dissolved in 8 ounces of liquefied carbolic acid. This preparation possesses many advantages; it is aseptic and antiseptic in the highest degree, then its employment is unattended with any of the dangers of Apostoli's appliances, and, as I have just said, it yields equally good, if not better,

results. Secondly, the carbolic acid exercises a powerful anodyne effect on the endometrium, thus the pain produced by the application speedily subsides; and thirdly, it possesses powerful alterative properties.

The first class of cases which I propose to take up is that of endometritis, which, as we know, is the source of much suffering and misery. Moreover, I am convinced it is *the* most important factor in those inflammatory diseases which affect the Fallopian tubes, this being directly due to the congestion spreading by continuity of tissue, which I have referred to in another chapter. The lymphatic connection with the ovaries also places beyond doubt the fact, that disease in the ovaries is also in the great majority of instances secondary to uterine disorders. No one with experience in gynæcology will, I venture to say, disagree with me when I state that the ovaries, in a very considerable proportion of cases where endometritis exists, are affected secondarily to the uterine affection, the consequence being oöphoritis in a more or less aggravated form. The very fact, the accuracy of which I can vouch for, that cases of salpingitis completely recover while endometritis is being treated successfully, confirms this. It has been my good fortune to note the steady decrease and complete disappearance of ovarian mischief under similar circumstances. The frequent, nay, almost constant presence of ovarian hyperplasia and hyperæsthesia in endometritis, points conclusively to the fact that a morbid condition of the ovaries in these circumstances depends solely upon a diseased

uterus, and the disappearance of the oöphoritis simultaneously with the endometritis, puts this beyond all question. While considering this subject it is worthy of note that the pain produced by an application to the diseased endometrium is more frequently referred by the patient to the site of the ovaries than to the uterus itself.

Before quoting cases illustrative of what appears to me as being the most beneficial method of employing medicaments to the endometrium, I would draw attention to the possibility, in long standing cases of endometritis, of the disease having progressed to such an extent as to develop a granular, if not actually a fungoid condition of the lining membrane. It is, therefore, of the utmost consequence that redundant growths of this nature should be removed as a preliminary to the strictly medical part of the treatment. By means of the curette, if judiciously applied in such circumstances, the possibility of a speedy recovery will be almost invariably fulfilled. The desirability of employing the curette, and its *modus operandi* are not difficult to comprehend, for the simple reason that when the unhealthy tissue is removed the application of iodised phenol (which I prefer for the purpose) comes in direct contact with the actual, as contradistinct from the adventitious tissue. Moreover, when we consider further that beneficial effects of local treatment of this nature are produced almost entirely by the stimulus imparted to the uterine walls, causing thereby contraction of their muscular fibres, and the removal of hydrostatic congestion, the tone of the

uterus is, as a natural consequence, improved, and the normal rigidity of the organ is re-instated.

The curette which I employ is, not only in my opinion, but in that of my friends, a great improvement upon the ordinary form of spoon or wire curette. It is constructed in the form of a cage, composed of four steel bars of about 1-16 of an inch square. The curette is made in six different sizes, commencing with the calibre of a No. 8 catheter, and increasing in size up to that of a No. 18, while the length of the instrument is $2\frac{1}{2}$ inches. The edge of each bar is slightly sharpened on the right side, so that when it is rotated within the uterine canal it has the effect of removing any unhealthy tissue that may be present, and the form of the instrument is such that it acts also as a dredge, so that whatever is detached from the lining membrane is removed on the withdrawal of the instrument. The course which I usually adopt is to commence with the smallest size and finish when conscious that the whole of the uterine wall has been acted upon, and that there would be difficulty in rotating a larger instrument. It will be obvious to anyone who has seen the instrument used that the risks of curetting by its employment are reduced to a minimum, as it would be next to impossible to puncture the uterine walls if the most ordinary care is exercised. This instrument is manufactured by Krohne and Sesemann, 7, Duke Street, Manchester Square, London. Reference to page 80 will give a pretty correct idea of its form and mode of action.

Mrs. R., aged 38, the mother of two children,

the youngest of whom was 10 years of age, consulted me in 1887. She gave me the following history :—She had never been well since the birth of her youngest child, and when I first saw her she was in very feeble health. She had consulted several eminent gynæcologists in London, and had been more or less under treatment all these years without deriving benefit, and she told me that although she had come at the urgent request of friends to consult me about her ailment, she did not expect that I would be able to do her any good. Her symptoms consisted of acute pain over the right ovary, which was aggravated on the slightest exercise; and of great weakness, which was very pronounced after the slightest fatigue. She was terribly depressed in spirits, and her temper was very irritable. In short, there were present all the train of symptoms which we are familiar with in cases of uterine disease.

On examining *per vaginam*, I found the perineum was deficient, having been lacerated during her first confinement. The uterus was lying low, was very flabby, and highly sensitive to the touch, while from its orifice a muco-purulent discharge was exuding. The right ovary was considerably enlarged, and also hypersensitive. On applying iodised phenol to the endometrium, great pain was produced, which she referred especially to the region of the right ovary. The applicator was permitted (as is my custom) to remain within the uterine canal for a minute or so, until, in fact, it had excited sufficient muscular contraction to render its withdrawal more difficult than its intro-

duction. A tampon, saturated with the glycerine of alum and boracic acid, was then placed in the vagina in such a position that it would act not only as a depleting agent, but also as a temporary support to the uterus. This was permitted to remain in for three days, when the patient came into Glasgow to my private hospital, where I repaired the perineum and curetted the endometrium, for I am firmly convinced that with an imperfect perineum it is next to impossible to get a satisfactory result, as metritis and prolapsus are invariably largely due to this defect. We can, therefore, calculate upon obtaining more speedy and satisfactory results if this preliminary step is taken. Moreover, the good results have every chance then of being permanent. After the perineum was restored to its normal condition, the patient remained under treatment for four months, during which period I applied iodised phenol once a week to the whole extent of the lining membrane, after which a tampon was introduced and allowed to remain in for three days, when it was removed, and a new one put in its place and permitted to remain for a like period. Now, this patient had thirty miles to travel each time she came to see me, and this, with the return journey, must necessarily have retarded her recovery. Had she been resident in Glasgow, I am convinced her recovery would not have been so long delayed; yet, notwithstanding this drawback, her health was so far restored by the end of four months, that she expressed herself as feeling better than she had done for ten years. Besides the local treatment,

she took $2\frac{1}{2}$ grains valerianate of zinc, and 2 grains of extract of conium, in pill, forenoon and afternoon. The bowels were cleared by an enema every second day, and other hygienic measures were carefully attended to.

I should here state that simultaneously with the disappearance of the uterine disorder, the ovarian irritation subsided.

Now, here was a case which had been under treatment, more or less, for eight years, without deriving the slightest benefit, recovering when the treatment was directed to the endometrium, so that in four months her health was completely renovated. Better evidence of the utility of intra-uterine medication in suitable cases, is surely not to be desired. I have seen the patient frequently since, and she assures me that she has never had the slightest return of her old complaint.

I will now proceed to give the history of a distinctly different example, and will do so as briefly as possible, for it would be a waste of time to describe the subjective symptoms with which every medical man is so familiar.

Mrs. T., aged 33, married six years, two children, youngest four years of age. Patient has not felt well since last confinement, her health gradually going down since, although she has gained very much in weight. During the past two years she has suffered severely from metrorrhagia, which at all times continued for three out of the four weeks, and when it did cease, a purulent discharge took its place. Vaginal examination disclosed an anteverted, enlarged, and

flaccid uterus. The uterus was curetted, and she underwent two months of intra-uterine and tampon treatment; but in this case the application was made bi-weekly. She was also put upon 15-grain doses of the muriate of calcium, three times daily after food, because of her strumous appearance. She called upon me three months after the treatment was commenced, and one month after it had been discontinued, to report progress, when she expressed herself as feeling quite well, and informed me that her menses the last time had continued only five days. It is needless to remark that it would be too much to expect every case of this disease to yield so readily to treatment as those I have detailed, but even if we get equally satisfactory results in six months, we have great cause for congratulation, and in the very large majority of cases we shall not need to persevere for any such lengthened period. For my part, I hold there is no class of cases which give so much gratification to a medical man as this form of disease, from the knowledge that the success of treatment is so certain, and the relief to the patient so pronounced and visible, not only to herself, but to her friends.

I hardly require to give in detail any more instances of this disease which have come under my notice, though this would be no difficult matter. It would be desirable, however, to take note of its prevalence, even amongst young women, where it necessarily gives rise to most acute dysmenorrhœa, and also undermines fre-

quently, to an alarming extent, the physical and nervous health of the individual. Hystero-epilepsy is frequently due to this cause. Instances of this distressing affection have often come under my observation, and I have been gratified to find that, in a large percentage of these cases, complete recovery has followed the removal of the uterine disorder.

We must not overlook the probability that marriage, when endometritis exists, has a most prejudicial effect, as invariably the endometritis is thereby increased, and frequently to such an extent that, doubtless, sterility and gradually failing health will result. This is a most delicate but important matter for consideration. Notwithstanding this, however, it should be unhesitatingly dealt with whenever it exists, or most assuredly a miserable married life will be the experience of your patient. In such cases it will almost invariably be ascertained that vaginismus exists to a very considerable extent. It will be necessary, therefore, before any consecutive treatment can be carried out, to overcome this in the first instance.

On the day that I happen to be writing this, one of my unmarried patients, who had been under treatment during three months for metritis, called upon me. She suffered most intensely at each period from dysmenorrhœa, and also had been subject to epileptic seizures. She has now completely recovered from the metritis, with the disappearance of which the dysmenorrhœa and epileptic attacks have gone also.

I will now proceed to speak of intra-uterine medication in a class of cases where, so far as I am aware, it has not hitherto been much employed, but in which, in my hands, has proved most efficacious. When we come to consider the pathology of flexions, it will be apparent that these are invariably associated with a flaccid condition of the uterine walls, resulting from prolonged congestion of the parts; and while it may not be admitted that this is invariably the cause of malpositions of the uterus, it cannot be denied that it is invariably associated with flexions and especially retroflexions. One thing is evident, namely —that the disappearance of this atonic condition of the organ which so uniformly prevails in flexions, has, in a very large majority of instances, resulted in the removal of the displacement, and has given a permanency of relief which could not possibly be obtained by the introduction of any variety of pessary that I am acquainted with. It will be obvious to the unprejudiced mind that if we restore the flexed organ to its normal position, and simultaneously employ means to restore the tone of the uterine walls, we shall obtain much more satisfactory results than if we simply keep in view the retaining of the debilitated organ in position by a pessary. In the former case, we not only take measures to relieve the uterine engorgement, but also the concomitant constitutional symptoms, and thus the general health of the patient becomes improved, whereas, by the latter method of treatment, the health remains very much *in statu quo*, from the fact

that the atonic and hypertrophied condition of the uterus continues, or, under the most favourable circumstances, disappears very slowly. It must not be inferred, however, from what I have said, that I would advocate the discarding of pessaries altogether in the treatment of flexions, for in many instances they prove a most useful auxiliary in the early stages of treatment. My plan is, first, by means of the sound, to ascertain exactly the curve of the flexed organ, then afterwards bend the applicator (which is made of soft copper wire) into the curve which the sound indicates. Having armed this with cotton wool, firmly wrapped round the distal end to the extent of three inches, and saturated it with iodised phenol, it is passed up the uterine canal as far as the fundus. By means of the applicator, the uterus is made to rotate till it occupies its normal position, and there it is retained until a tampon, saturated with glycerine of alum and boracic acid, is introduced behind the body and fundus, so as to prevent it resuming its abnormal position. As a rule, the uterine walls contract firmly on the foreign body, and remain rigid and erect. The applicator is then withdrawn, when it will be ascertained that, for the time being, the uterus retains its rigidity, and does not tend at once to return to its previous position, but rather to remain for a time, without any extraneous support, in that to which it has been restored, while the tampon acts afterwards, not only as a support, but at the same time exercises a depleting effect upon the congested organ. A repetition of this treatment for

a few weeks will generally culminate in the uterus being able to retain its natural position without any mechanical support whatever, and the time will speedily arrive when its complete restoration to health will be self-evident. As a rule, it will be unnecessary to make the application to the endometrium more frequently than once a week; but, of course, the tampon should be renewed every three days, and always so placed as to support the drooping fundus.

The object of a tampon is two-fold, as will be inferred from my previous remarks—namely, first to retain the uterus in position, and, secondly, to act as a depleting agent to the hypertrophied tissues.

By this method it is almost a matter of certainty that the treatment will be followed by a complete disappearance of the tendency of the uterus to resume a retroflexed position; in short, it is restored to, and remains in, its normal position, and this solely on account of its health having been re-established.

The treatment of such cases will, as a rule, occupy from three to four months, and during this period it has hitherto been my custom to introduce a Hodge's pessary before the menses are expected, and to allow it to remain until the flow has ceased, with a view to retaining any advantage that has previously been gained; then, after the period has ceased, the pessary is removed and the treatment resumed.

The two following cases will be sufficient to illustrate the foregoing remarks:—Case 1. Mrs.

P., aged 35, consulted me about six years ago; she had slight retroversion, combined with retroflexion, and considerable hyperplasia of the uterus. The os and uterine canal were patulous, from which was oozing a muco-purulent discharge. She complained of the usual symptoms in such cases, but her principal dissatisfaction consisted in the fact that she had miscarried eight consecutive times at about three and a half months. The cause of the frequent mishaps was, to my mind, due not only to the unhealthy condition of the uterus, but to its position, as, from the relation the fundus bore to the hollow of the sacrum, I could see that if pregnancy existed, the enlarging uterus would, as a matter of course, become impacted in the sacral cavity, and therefore would be unable to attain any further development, when, as a consequence, abortion would necessarily follow. I therefore proceeded with the plan of treatment which I have described, and with the most satisfactory results, as far as the flexion was concerned, but I took the precaution of inserting a Hodge's pessary within the vagina at her last visit to my house. Within a few months afterwards she again became pregnant, and sent for me so that she might be informed as to the position of the uterus. On examination, I found that this was normal, and nothing in this instance interfered with the progress of her pregnancy, and she was confined at the full time, everything having gone on quite satisfactorily. I have seen her frequently since then, and she has had no further return of her old complaint.

Case 2. Mrs. L., aged 36, consulted me in 1888. She was wearing a Hodge's pessary for retroflexion, but complained of it hurting her very much. She dated the commencement of her illness from the birth of her last child, which took place in China eight years before, since which time she had been more or less of an invalid. The uterus was exquisitely sensitive, and she always experienced acute suffering both immediately prior to, and during the first day of, the menstrual flow. There was not only metritis, but, as I have said, excessive hyperæsthesia of the organ, so that I was afraid to interfere with the endometrium before I had first of all reduced considerably the sensitiveness and congestion by the employment of glycerine of alum and boracic acid tampons, which were introduced bi-weekly for a month, after which time the uterus was curetted and intra-uterine medication immediately afterwards commenced. The applications were made once a week, and each time the uterus was restored to its normal position and retained there by one or more tampons properly adjusted. During the whole period of treatment, which occupied about three months, she expressed herself as being highly gratified by the results obtained, she being conscious of gradually returning health. At the end of the period named the uterus was able to retain its normal position, and there was complete absence of any inflammatory symptoms.

Of course, it goes without saying that the time necessary for treating such cases depends very

much upon the severity of the disease which obtains, but very rarely indeed will it be necessary to continue the treatment for a longer period than three months if this is inaugurated by curetting, and due attention is paid to the condition of the bowels, the state of the digestion, and if ordinary care is exercised by the patient herself.

In concluding this article, I should like to refer to a subject which has always engrossed to a very large extent the attention of gynæcologists. I refer to the treatment of fibroids of the uterus. I must confess that I am neither an apostle of Apostoli, nor a faithful disciple of many gynæcologists who, without hesitation, decide upon heroic measures, when a less dangerous line of treatment would prove of advantage. If, on the one hand, these growths can be got rid of by electricity applied to the endometrium, or by the more dangerous method of applying the current directly to the tumour; or, on the other, by removal of the uterine appendages, by which the blood-supply of the ovarian vessels is removed, it might naturally be suggested, might the end not be accomplished by so restoring the equilibrium of the uterine circulation and tonus of its muscular structure. The blood-supply then will only be sufficient to nourish the normal tissue to the disadvantage of the adventitious growth, so that the latter will be compelled to assume the character of a foreign body, which it undoubtedly is. Thus by the contractile power of the uterine

fibres the circulation will be so restored and limited, that the growth will either be starved out of existence, or expelled from its nidus.

These may be considered very crude ideas, but facts are stubborn things, and with these remarks I will proceed to defend the position I here take up. Twelve years ago I was called to attend a case of endometritis which had completely undermined the health of the patient. She had copious muco-purulent discharge from the uterine canal, and at the catamenia the flow was excessive. On examination I could detect a small myoma in the anterior wall just beyond the cervix, but to this I gave very little attention, and proceeded to treat the endometritis in my usual way. The result was so far satisfactory that the patient improved rapidly in health, but whenever treatment was discontinued she fell back again to her former condition, till on one occasion, on making the application to the canal the applicator, when withdrawn, was minus the cotton wool with which it was loaded, and, do what I could, I failed to extract the cotton; so I was obliged to console myself with the fact that it was charged with an aseptic substance and could not possibly do any harm, even though it did not come away for a day or two. Within a few hours of the patient's return home she was seized with violent uterine pains, and I was sent for to find her suffering most acutely. In a short time, however, after my arrival at the house the small fibroid before mentioned was expelled into the vagina, and along with it the cotton I had left *in utero*, after which

all pain ceased. I removed the polypus, and from that time the patient has not suffered from any uterine trouble whatever, but, on the contrary, has borne two children.

Since that period I have treated many cases of fibroids, when these were of small size, by acting on the endometrium, and through it upon the uterine walls, with the most gratifying results in a considerable percentage of cases.

CURETTAGE.

Curettage of the uterus is such an important adjunct to the treatment of the various affections of the endometrium, that a word or two on the subject will, I think, not be out of place. It is an operation which should never be performed without the most careful antiseptic precautions, as it is certainly due to the absence of these precautions that so many distressing, not to say fatal, results have ensued. These precautions are all the more necessary if the old form of spoon curette is employed, as necessarily, except in the most experienced hands, the uterus will receive an amount of ill usage which must entail a considerable amount of danger. More especially will this be the case if the health of the organ has so far suffered as to induce a softened condition of its texture. In these circumstances the operation must necessarily, if the spoon curette is employed, be one where considerable risk is incurred. Moreover, the operation should never be undertaken by one who is not thoroughly proficient in the use of the instrument. If, on the other hand, strict antiseptic precautions are employed, and the instruments are rendered thoroughly aseptic, the em-

ployment of the dredge curette—of which an illustration is given—will reduce the risk to a

minimum. This will be obvious to any observer from two important facts, the first of which is, that the curette removes on its withdrawal from the uterine canal all of the unhealthy tissue that has been acted upon; and secondly, because it is impossible, by its careful employment, to perforate the organ or injure the normal tissue. Moreover, preliminary dilatation is not necessary, as the graduated sizes of the curette permit of its safe application under the varying conditions of the uterine canal as to calibre and the extent of the existing disease. Notwithstanding all these advantages, however, the greatest care must necessarily be observed in the after-treatment of the patient, and she should on no account be permitted to leave her bed under a week after the operation. It is also essential that after the withdrawal of the last curette the endometrium should be thoroughly sterilised by the application of iodised phenol to the whole of the denuded surface, and it is even desirable to renew the application two or even three times before an aseptic and astringent tampon is introduced. So far as my experience goes, I have not been able to attribute any septic mischief as a result of the operation. In only one instance was there the slightest suspicion of this having occurred, and this did not supervene until ten days after the operation, and two medical

friends who saw the case with me did not attribute the parametritis which followed to the operation at all, but were quite decided in their opinion that it was entirely due to a chill which the patient had contracted by going out in a cold and damp atmosphere.

When I state that I have performed this operation frequently as many as three times in a week, I feel confident that my readers will agree with me that the results have been eminently satisfactory. Notwithstanding the fact, however, of such immunity having followed the operation in my hands, I never undertake it without feeling the grave responsibility that it involves. Its great safety lies entirely in the fact that the most stringent antiseptic precautions are invariably observed, not only at the time of the operation, but in the subsequent treatment.

The time that I prefer for performing the operation is about a week after the menses have ceased, and I am not deterred by the existence of acute symptoms which may exist in the tubes or ovaries, for I am convinced that while the unhealthy condition of the endometrium remains, these other unhealthy concomitants will not tend to disappear, and there is not the slightest danger of these being aggravated by the treatment I here advocate. On the other hand these, as a rule, rapidly subside *pro rata* as the uterus recovers its healthy condition.

ICHTHYOL AS A THERAPEUTIC AGENT IN THE TREATMENT OF DISEASES OF THE UTERINE ADNEXA.

Some four years ago I had the honour of reading a paper before the British Gynæcological Society upon the therapeutic effects of ichthyol in diseases of the uterine appendages. The results which I had obtained previous to that date had been so eminently satisfactory that I have been encouraged to employ the treatment on a very much larger scale than I had previously the opportunity of doing. Before that date it was my almost uniform custom, when patients suffering from diseases of the tubes or ovaries presented themselves, to advise the operation for their removal; this I did under the impression that nothing short of operation could possibly remove the diseased condition. I may add that it was not because I had any fear of the result of operative treatment in these cases, that has influenced me since that period in discarding it wherever I had the opportunity, as it has been my good fortune never to have had a fatal result after oöphorectomy. I remember quite well, when I gave the results which followed the employment of ichthyol tampons in salpingitis,

oöphoritis, hæmatoma, and pelvic cellulitis, that on the discussion of my paper several questions were asked with reference to the unfavourable effects that such a treatment produced on the neighbouring organs, especially the bladder. Now, I confess that ichthyol, in a very small percentage of cases, does produce unpleasant bladder symptoms, but these are so infinitesimal, and can be so easily modified, that I have no hesitation in saying that they cannot be said to militate in the slightest degree against the incalculable beneficial effects which result from the employment of this agent, and perhaps the most complete evidence in support of this statement may be adduced from the fact that although at the present day I am seeing probably three or four times as many cases of pelvic disease that I did at the time at which the paper referred to was written, my operations have fallen off in an inverse ratio. To me the effects of ichthyol in the treatment of these at one time intractable diseases, are perfectly marvellous. Were I to give instances of a very small percentage of the number of cases which I have seen beneficially affected and cured by the simple method of applying ichthyol tampons, I feel assured that operations of the serious nature, necessary for the removal of diseased appendages, would rapidly decrease to a considerable extent. . . . . When it is taken into account that a woman undergoing such an operation cannot possibly be considered completely convalescent under a period of two years, it cannot be gainsaid that this fact alone, discounting altogether the dangers that the operation necessarily involves,

adds very much to the responsibility which the surgeon undertakes.

It is not my intention in this chapter to quote from any of the many authorities on this important subject, but simply to give the results of my own experience, which I think, from the number of cases I have had the opportunity of treating, I am fairly entitled to do.

The result of careful observation has led me to the conclusion that it is very rarely indeed, if ever, the tubes or ovaries become diseased independent of some pre-existent disease or lesion which has occurred in the uterus or cervix; and as these may arise from so many different causes I think it imperative, in giving my views on this subject, to glance, at all events, at the ætiology of the various pelvic disorders which are daily coming under my observation, and in the treatment of which I find ichthyol so eminently useful, seeing the efficacy of the therapeutic (as it can easily be imagined) would be very much handicapped, if not altogether destroyed, were the primary diseases either in the first instance, or simultaneously, not attended to.

To prevent any misapprehension as to the particular diseases which are included in this group, I must guard the statement which I have just made, by stating that I only refer to diseases which are septic or inflammatory in their nature. I make the reservation that cystic, malignant, fibroid, and tuberculous affections, may be excluded from the category of those diseases of the ovaries which are dependent upon a primary uterine origin, and which are certainly beyond the range of ichthyol

as a therapeutic agent. It is rarely indeed that we find salpingitis and its sequelæ without a pre-existing endometritis; and this, again, is dependent upon so many pathogenic sources, that it would be quite foreign to my subject to trace its ætiology throughout. One powerful factor, however, must not be overlooked, as it has an important bearing upon the causation of oöphoritis, as well as being an invariable precursor of endometritis: I refer to laceration of the cervix, when it will be invariably ascertained that, if in the circumstances an ovary is implicated, it is upon the side on which the laceration exists. It therefore becomes a necessity that, simultaneously with the application of ichthyol, this lesion be attended to. If, however, the fissure of the cervix has been in existence for any considerable period, it may prove a difficult matter to deal with it before the diseased condition of the endometrium has been at least partially rectified, and the thickening of the cervix resulting from this has been reduced, so as to bring it into a favourable condition for trachelorrhaphy. So far as my experience teaches me, it is not necessary to repair the cervix to ensure recovery of the endometrium, but the chances are that the recovery will not be permanent if the lesion is permitted to continue, and certainly the ovary will not have nearly such a good chance if trachelorrhaphy is not resorted to.

Few, I venture to affirm, will differ from me in coming to the conclusion that salpingitis, with its consequent evils, almost invariably results from

the inflammatory condition in endometritis spreading by continuity of tissue, and also that, in many instances, the ovaries become secondarily affected to the tubal disease. This, I pointed out in a previous chapter, is probably communicated through the lymphatic system; it stands to reason, therefore, that in treating inflammatory conditions of the ovaries and tubes, it is absolutely necessary to remove the primary morbid conditions which have given rise to the secondary affections, in the manner I have indicated.

Two marked cases will suffice to indicate the line of treatment which I have found most beneficial, as both of these ladies came to me from England for treatment, and in both instances removal of the ovaries had been recommended by men whose reputation is of the highest order. Both patients were married, and had borne children; the one had been an invalid for eight years, and the other for over six, and during these periods both had been sterile. One ovary in each case was considerably enlarged and exceedingly tender, while the other was diseased to a less marked degree. In both instances endometritis, with considerable hyperplasia, existed, and the general health was very much reduced; and great pain on locomotion was experienced by both. I commenced the treatment by curetting, employing my dredge curette, and afterwards applied iodised phenol once a week to the whole of the endometrium, while a tampon, saturated with ichthyol, was introduced bi-weekly. This treatment was kept up for about three months in each case, a

gradual improvement in health and relief of the local symptoms being the result. One of these patients (the younger of the two) became pregnant within a year afterwards, and was delivered of a healthy child at the full term. Both are at present in the enjoyment of good health.

In these two particular instances, there was no cervical lesion, but a history of subinvolution, which was evidently the *casus morbi*.

In another case, where gonorrhœal infection, contracted shortly after marriage, was the *origo malis*, sterility had existed for twelve years, and both tubes were diseased. Curetting, and the bi-weekly application of iodised phenol, followed each time by the introduction of a glycerine and alum tampon, was sufficient to restore the integrity of the uterus and tubes after a prolonged course of treatment; but I am convinced that had the therapeutic effects of ichthyol been understood at that time, the convalescence would not have been so protracted. As it was, however, when the morbid condition had disappeared, a child-bearing epoch was established, and continued for some years.

I quote this case simply to show how important it is to take measures to remove the primary disease or lesion simultaneously with the treatment of the secondary, and this is most emphatically the case where laceration of the cervix co-exists. To my mind, therefore, if we make it our primary object to treat those affections of the uterus which are within our reach, and succeed in restoring the organ to its healthy

condition, we have a most reliable and almost uniformly potent therapeutic agent in ichthyol, where inflammatory conditions of the uterine appendages co-exist.

During the past year I have treated 227 cases of diseased ovaries, dependent, as has been proved by the result of treatment, upon primary uterine affections. These have all been treated upon the lines which I have indicated in this volume, and, with the exception of nine, which is not quite five per cent., they have all recovered, or are in process of recovery, without operation.

As regards flexions, I have had seventy-two cases under my care during the past twelve months, and, without an exception, each one has completely been removed simultaneously with the recovery of the health of the uterus. I must state, however, that in several instances where the patients had come from a distance, and in consequence of which it was not convenient for them to be under occasional surveillance, I took the precaution of introducing a pessary to avoid all risk of recurrence. This, to a sceptic, might indicate a want of faith on my part in my own method of treatment. This is not the case, however, it being only a precaution which should be invariably taken in such circumstances; moreover, my reputation would to a certain extent be at stake should a relapse occur, and it is only natural that one should take every precaution to prevent such a contingency. The application of the pessary, moreover, can never do any harm if the uterus is healthy and *in situ*, whereas, if it is unhealthy and is forced into its normal position by a pessary, this, in many instances, will set up an amount of irritation which might give rise to alarming symptoms. In the early days of my practice I have had examples of this kind which have taught me very serious lessons.

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